SHOULD THE ARMY IMPLEMENT PRIME VENDOR FOR CLASS IX REPAIR PARTS?

A MONOGRAPH
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ABSTRACT

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As the U.S. Army logistics community implements the revolution in military logistics (RML) in support of Joint Vision 2010 and Army Vision 2010 the focus in the repair parts arena must be on managing information and distribution instead of inventory; managing suppliers not supplies; buying response time instead of inventory; and managing the integration of logistics capability versus owning logistics capability. This monograph examines the feasibility of leveraging the successes of other prime vendor programs as well as commercial business practices to develop a prime vendor program for class IX repair parts.

Through a review of the history of military logistics and four prime vendor programs currently in place or under development a class IX repair parts prime vendor framework will be developed. An analysis of this framework, applying the lessons learned from the prime vendor programs reviewed and commercial industry inventory management and materiel distribution business practices, will determine the viability of developing a prime vendor program for class IX repair parts.

Development of a prime vendor program for class IX repair parts is feasible. Every benefit defined under the Defense Logistics Agency (DLA) Prime Vendor Program is achievable. The layering of repair parts at multiple echelons will be eliminated. Inventory, inventory management, and transportation costs will shift from the government to the prime vendor. The experiences of private industry will be leveraged. Finally, DoD will achieve significant annual savings and revolutionize support at the wholesale level.

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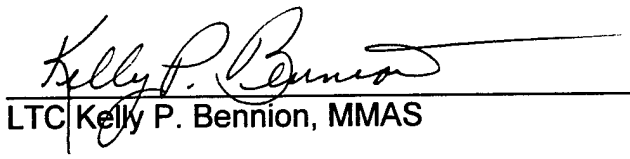

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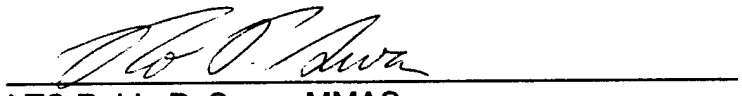

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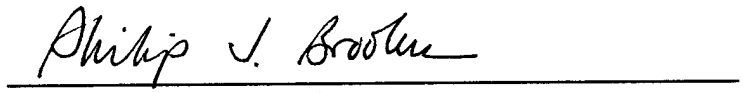

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> Advanced business solutions for inventory control, materiel management and distribution, transportation and warehousing, and automatic cross-leveling and rerouting will greatly expand current Army Total Asset Visibility and Objective Supply Capability.[1]
>
> Army Vision 2010

SECTION I: INTRODUCTION

In order to obtain full spectrum dominance in the 21st century the logistics pipeline must get smaller. Joint Vision 2010 is the template for the Armed Forces of America to achieve this level of effectiveness in joint warfighting. By leveraging technology and adopting commercial business practices, the Armed Forces will continue to possess the capability to dominate military operations across the virtual battlefield. Joint Vision 2010 is built on four key operational concepts: dominant maneuver, precision engagement, full dimensional protection, and focused logistics.[2] Joint Vision 2010 defines focused logistics as the fusion of logistics information and transportation technologies for achieving rapid crisis response, deployment and sustainment, the ability to track and shift units, equipment, and supplies while they are enroute, and delivery of tailored logistics packages directly to the warfighter.[3]

Army Vision 2010 is the U.S. Army's template, as the land component commander of the joint warfighting team, for achieving the operational concepts defined in Joint Vision 2010. Army Vision 2010 has six patterns of operation: protect the force, project the force, decisive operations, shape the battlefield, sustain the force, and gain information dominance.[4] Army Vision 2010 defines its operational concepts that align with sustain the force as: anticipatory logistics and personnel support, split-based operations, sustained

tempo, enhanced throughput operations, velocity management, battlefield distribution system, total asset visibility, and objective supply capability.[5]

The common thread that runs through the operational concepts defined in Joint Vision 2010 and the patterns of operation defined in Army Vision 2010 is information superiority. Information superiority is the ability to collect, process, and distribute an uninterrupted flow of information while denying or exploiting an adversary's ability to do likewise. Our ability throughout the Department of Defense (DoD) to capitalize on information superiority and technology advances is critical to optimizing focused logistics as defined in Joint Vision 2010 and sustain the force as defined in Army Vision 2010.[6]

Although they appear somewhat different, sustain the force aligns directly with focused logistics as the key logistics enabler for achieving this revolution in military logistics (RML). Both the Joint Staff and the U.S. Army understand the importance of obtaining the goals defined under the six tenets of RML: a seamless logistics system, distribution-based logistics, total asset visibility, agile infrastructure, rapid force projection, and maintaining an adequate logistics footprint.[7]

The RML calls for a logistics system that focuses on management of information and distribution, not inventory. Distribution-based logistics represents a new way of doing business in the combat service support community. The initial focus of RML, from now until 2010, will concentrate on taking advantage of commercial business practices, technology advances, and communications enhancements; providing better unity of command by reshaping command and control relationships; and improving distribution methods and technologies that will support rapid throughput under Army XXI.[8]

Additionally, because most units will retain legacy systems through the 2030 time frame, velocity management(VM) is a key component of this phase of RML. Most of the U.S. Army needs improvements to current systems as they await the future benefits RML will provide. VM is a U.S. Army initiative to dramatically improve key logistics processes being used today. The VM initiative began in 1995 after the top three logistics organizations, Army Materiel Command (AMC), Department of the Army, Office of the Deputy Chief of Staff for Logistics (DA, DCSLOG), and U.S. Army Combined Arms Support Command (CASCOM), agreed to its implementation. Today, the Commanding General, CASCOM has executive agent responsibilities for implementation of approved VM initiatives. The VM initiative is analyzing technological and managerial business practices used in commercial industry today and applying them to the military whenever an immediate savings can be realized. By improving the accuracy of information, distribution techniques, and speed of data transmission VM is contributing to reducing the size of inventories and therefore reducing the logistics footprint on the battlefield. VM is focusing on improving existing logistics processes in three areas: time, quality and cost. In other words, make it faster, better, and cheaper.[9]

The second wave of RML, from 2010 and beyond, will focus on lightening the support requirement, projecting forces faster, and reducing the overall demand for logistics. A strong partnership with industry, the joint community, and other services will allow the U.S. Army to leverage emerging technology and build these capabilities collaboratively with our partners.[10]

The U.S. Army has transitioned from a threat-based force to a capabilities-based force capable of dominating the entire spectrum of conflict. Leading the U.S. Army will be the digitized Army XXI division -- the backbone of the U.S. Army's capabilities-based force. Our logistics organizations must also be capabilities-based: modular for flexibility; have reach-back capability; be able to anticipate and predict logistics requirements sooner; have total asset visibility of wholesale stocks, retail stocks, and stocks in the pipeline; be able to focus limited logistics resources at the point of the spear; and react faster than ever before to a changing environment. The overarching objective is to achieve a single combat service support (CSS) operator, point of contact, at each echelon to facilitate maximum throughput and follow-on sustainment. At the wholesale level, maybe this point of contact will be a prime vendor?[11]

The RML is still in its infancy. The logistics improvements being achieved by commercial industry did not happen overnight. Commercial businesses, for profit reasons, were forced to overhaul their support structure or risk going out of business. By re-engineering their business processes they now contract out services that can provide better performance at lower costs, apply information technology solutions to old problems and much to their disbelief they have overcome their opponents who insisted on business as usual. As RML matures the logistics system will become predictive, anticipatory, and responsive -- a system that uses sensors to anticipate equipment problems, monitor consumption, and automatically generate replenishment to a predetermined level based on operations tempo (OPTEMPO) and projected battle requirements.[12]

As we transition into the 21st century, a fundamental change is taking place; in light of the reductions and changes in processes being proliferated by RML, a shift is occurring from a position of "owning" logistics capabilities to that of "managing the integration" of logistics capabilities.[13]

The Defense Logistics Agency (DLA) has embarked on an aggressive effort to improve its support to the warfighter. One of DLA's key concepts is to capture and adapt commercial business practices into its operations. DLA's focus is shifting from managing inventory to managing information throughout the supply chain; from managing supplies to managing suppliers; and from buying inventory to buying response time.[14]

DLA is achieving great success with prime vendor business agreements. Instead of dealing with individual suppliers DLA and the customer now have one full-service distributor as their single point of contact. The prime vendor, using just-in-time (JIT) business practices, provides all the materiels in a product line or specific commodity area to their regional customer base. The prime vendor program puts customers in direct contact with the vendor and eliminates the middleman, a win win situation for all parties.

This monograph will look at the prime vendor concept to see if there is an even broader application of prime vendor that can be applied to the management of class IX repair parts. The focus of this monograph is to analyze the feasibility of implementing prime vendor for class IX repair parts focusing on linking the repair parts requirements to the prime contractor that builds each system. The three criteria to analyze this question are:

- Cost savings. The baseline for analysis will be to identify savings to the U.S. Army as a result of inventory reductions, transportation costs, and administrative costs.

- Inventory reductions. The baseline for analysis will be to identify any inventory reductions at the depot and/or supply support activity (SSA) level as a result of passing inventory requirements to the prime vendor contractor. A review of Class IX surge requirements will determine if the U.S. Army or a prime vendor contractor should maintain surge stock inventory.

- Risk Assessment. Can the U.S. Army accept the risk associated with the reduction of class IX inventories. In other words, do the cost savings outweigh the impact on the availability of class IX repair parts and operational readiness of equipment?

The monograph will answer the question regarding the viability of implementing a prime vendor program for class IX repair parts U.S. Army wide. The methodology is first to review the history of military logistics and identify issues revolving around current methods of inventory management and materiel distribution that need to be relooked. Second, evaluate prime vendor programs currently in place throughout the U.S. Army to determine if a similar concept that provides just-in-time support, reduces government owned inventory, decreases pipeline costs, and streamlines delivery is feasible for class IX repair parts. The approach to accomplish this will be to review the Medical Prime Vendor Program and the Subsistence Prime Vendor Program to determine the applicability of each program to the class IX repair parts system. Next, conduct a review of the on-going efforts to develop the Apache helicopter Prime Vendor Support (PVS) Program and the

Paladin Fleet Management Pilot Program to understand the principles used to design these programs. Third, identify commercial industry inventory management and materiel distribution business practices adopted since the mid-1980s to determine their applicability to the Department of Defense (DoD). The fourth step will be developing a framework to determine the feasibility of using commercial industry business practices and the prime vendor concept for purchasing class IX repair parts. Finally, an analysis of this framework applying the lessons learned from current programs and integrating key concepts from commercial industry, the Apache helicopter PVS Program and the Paladin Fleet Management Pilot Program will determine the appropriate answer to the monograph question regarding the viability of implementing a prime vendor program for class IX repair parts U.S. Army wide.

SECTION II: HISTORICAL PERSPECTIVE

Since 1941 the U.S. Army has been operating a class IX repair parts system built on fundamentals that create stockpiles of excess repair parts at every echelon. This layering of inventory was designed to compensate for an inefficient system full of inventory management and materiel distribution challenges often delivering the wrong part to the wrong unit at the wrong time. Poor customer satisfaction, lack of visibility, and inefficient distribution drove logisticians to build a layered system full of safety levels, better known as buffer stocks, and reorder point calculations that attempted to compensate for inefficiency. These stockpiles of excess reduced the demand for an efficient supply system

because units could "live off the fat" during contingency operations, periods of supply shortages, failure in the distribution system, or budget cuts.[15]

The bottom line is customer satisfaction. Today, we are facing the challenge of determining how to satisfy the customer at the lowest possible cost. From the early 1940s until today the logistics system has made tremendous improvements, however, many of the problems the U.S. Army was experiencing in the 1940s still exist today with respect to inventory management, asset visibility, and distribution. The following two examples demonstrate the U.S. Army's inability to focus its efforts on fixing the asset visibility and distribution problems during the period between Operation Desert Storm and Operation Joint Endeavor. First, after Operation Desert Storm an artillery commander wrote, "At the announcement of the cease fire, I was ninety-five percent zero balance in M109 (Howitzer) lines," [prescribed load list (PLL) parts].[16] What he did not know is that the authorized stockage list (ASL) at one of the logistics bases may have had the repair parts to restock his PLL. Why was this? One argument hinges on the inability to identify what repair parts were inside the containers stockpiled at the logistics bases without physically opening and inventorying the contents of every container. Second, during Operation Joint Endeavor the problem associated with knowing the content of the containers was no different. The volume of containers flowing into the logistics base at one time along with the lack of knowledge of the content of each container created a sea of containers that had to be opened to determine if they contained critical non-mission capable repair parts or office supplies.[17] The executive officer of the 181st Transportation Battalion, which transported containers to Bosnia makes this observation.

> One of the difficulties associated with the deployment stage of Operation Joint Endeavor was the relatively large number of unidentified cargo containers which dotted the landscape. Due to the operation's tempo, immoderate weather and frequent changes in the mission and location of units, containers sometime lost their identity. This delayed the delivery of vital spare parts for key non-mission capable systems and eroded readiness task force wide.[18]

This supply system was characterized by an inability to deliver needed class IX repair parts in a timely manner and a lack of asset visibility for both the customer and supplier. This led many commanders to direct their motor officer/technician to reorder needed repair parts. The result was another stockpile of excess class IX repair parts.

The retail logistics system for the U.S. Army in the 20th century was designed as an inventory management system focusing on the layering of inventory and creation of excess to compensate for inadequate business practices, lack of asset visibility, and customer dissatisfaction. The monograph will now examine inventory management and materiel distribution issues at the wholesale level.

In 1997 the Government Accounting Office (GAO) looking at how spare and repair parts inventory costs could be reduced across the DoD made the following recommendations to the Secretary of Defense:

- Consolidate the Defense Logistics Agency (DLA) warehousing of identical items at a centralized location.

- Upon consolidating stocks, determine whether all current storage facilities are needed. Initiate action to close storage facilities DLA no longer needs.

The recommendations were made based on the following major findings.[19]

The U.S. Army has about 84,000 line items of general issue spare and repair parts valued at approximately $10.2 billion (Table 1). Approximately 88% of the U.S. Army general issue spare and repair parts are stored at seven different DLA locations. Only 12% of the U.S. Army general issue spare and repair parts are maintained at 110 different DLA locations (Table 2). Storage costs at each of these locations range from $0.48/square foot to $5.15/square foot depending on whether it is open or covered storage.[20]

Table 1

Storage Locations, Quantities, and Value of Army General Issue Spare and Repair Parts Inventory

(Dollars in Millions)

Number of Storage Locations	Number of Line Items	Quantities	Value
117	83,759	42,234,665	$10,185.8

Table 2

Value of Army General Issue Spare and Repair Parts Inventory by Type Storage Location

(Dollars in Millions)

Major Storage Locations				Other Storage Locations			
Number Lines	Number Items	Quantity	Value	Number Lines	Number Items	Quantity	Value
7	81,747	39,464,486	$9,642.2	110	11,159	2,770,179	$543.6

Note: Number of items and quantities do not match those shown in Table 1 due to the same item being stocked at multiple locations.

Most of the general issue spare and repair parts stored at non-major locations are in quantities of less than three (56%). Only 22% of the items have a quantity greater than 11 on hand (Table 3). Of the $543.6 million general issue spare and repair parts $169.2 million (31%) exceed the requirements for U.S. Army current operating stocks plus war reserves (Table 4). In fact, 53% of the items had zero issues over the two year period studied and an additional 32% of the items had five or less issues (Table 5).[21]

Table 3

Number of Spare and Repair Parts
Stored at Non-Major Locations

	Number of items stored at nonmajor locations with a quantity of:					
Number Items	1	2	3	4-6	7-10	11+
14,532	4,657	2,282	1,230	1,923	1,162	3,238

Note: Because some items are stored at multiple non-major locations the number of items in Table 2 and Table 3 will not match.

Table 4

General Issue Spare and Repair Parts Inventory at Non-Major Storage Locations Not Needed to Meet Current Operating and War Reserve Requirements

(Dollars in Millions)

Number of Line Items	Quantity	Value
4,735	897,638	$169.2

Table 5

Frequency of General Issue Spare and Repair Parts
Issues for the 2-Year Period Ending August 1996

	Number of issues:				
Number of Line Items	0	1-5	6-10	11-15	16+
11,159	5,950	3,695	894	416	541

Note: The number of line items may not agree with the total number of issues because the same item may be stored at multiple locations.

Finally, the U.S. Army is currently spending approximately $57.7 million annually to maintain stocks in excess of their current operating and war reserve requirements (Table 6). An analysis of 3,130 dormant lines located throughout DLA Defense Distribution Region West showed a potential savings, if these lines were eliminated or consolidated at other activities, of over 126,000 square feet of storage space valued at approximately $1.0 million.[22]

Table 6

Annual Inventory Holding Cost of General Issue Spare and Repair Parts
Not Needed to Meet Current Operating and War Reserve Requirements

(Dollars in Millions)

Number of Line Items	Annual Holding Cost
4,735	$57.7

Clearly, this 1997 GAO report identifies the problems with excess general issue spare and repair parts at the wholesale level. It also identifies the problem of multiple

storage sites with duplicative operating costs and storage costs to maintain minimal amounts of stocks. Finally, it points out the need for reexamining current military standards and developing greater efficiencies in inventory management, asset visibility, and materiel distribution business practices.

Velocity management (VM), as previously stated, focuses on substituting speed, accuracy, and visibility for volume in the logistics system. As business practices implemented under velocity management improve the visibility, speed, and accuracy of the class IX system the size of inventories will decrease and cost savings will occur. Stockage levels are based on a computation of demand over expected lead time. If the demand remains constant, and the in-transit time decreases, stockage levels will decrease. Consequently, as reliability in the logistics system increases and customers build trust in the improved performance of the logistics system, excess stocks will no longer be necessary at any level.[23] This is where commercial industry has been focusing since the mid 1980s. Using two key initiatives, Total Asset Visibility (TAV) and Just-In-Time distribution (JIT) to modify their inventory management and materiel distribution business practices, commercial industry's have increased customer satisfaction by responding to customer requests fifty to seventy-five percent faster, increasing their volume of business due to improved response time. As a result, inventory costs have been reduced by fifteen to twenty percent.[24]

JIT is defined as the ability to process and transport requests for personnel, equipment, and supplies quickly and economically delivering them to the right customer at the right place at the right time.[25] TAV is defined as the ability to provide timely and

accurate status of supply requisitions as well as information on the status, location, and movement of personnel, equipment, and supplies in the distribution system. TAV also includes the ability to act on the information (i.e., redirect personnel, equipment, or supplies) to affect the overall performance of the system.[26]

A review of early history reveals that JIT inventory management dates back to the 1920's and a man named Henry Ford. Unfortunately, private industry did not recognize Ford's JIT methods and it wasn't until the 1950's that JIT methods were again implemented by Motorola Corporation. The development of JIT methods came about because private industry was having the same inventory management and materiel distribution problems facing the U.S. Army. During the late 1950's private industry's production lines began to produce excess repair parts which eventually saturated their warehouses as well as store shelves.[27] As in the U.S. Army, the excess repair parts did not improve the turn around time for repairs or operational readiness rates of equipment.[28]

Motorola Corporation, in 1956, relocated their radio repair parts into a centralized location. Then, using an improved communications network and transportation system, they were able to provide their customers radio repair parts from the centralized warehouse faster and more efficiently. Within a few months, operational readiness rates on Motorola radios were up thirty percent. Despite the successes demonstrated by Motorola Corporation, US private industry interest in JIT methods did not materialize.[29]

From 1970 through 1973 Japanese manufacturer Toyota Motors became the most financially successful corporation in Japan. Using JIT methods and standards to improve their inventory management techniques, production and materiel distribution system

Toyota Motors increased customer satisfaction, lowered costs, reduced inventory, and increased their profits.[30] As Japan quickly became the leader in JIT methods the United States looked on.

It was not until the mid 1980s that commercial industry leaders in repair parts management, (e.g., General Motors Corporation, Toyota Motor Corporation, Boeing Aerospace Corporation, Caterpillar Corporation, Freightliner Corporation, and International Business Machine (IBM) Corporation) began teaming with commercial distribution experts (e.g., United Parcel Services Corporation and Federal Express) to solve problems in commercial industry with inventory management (receiving, storing, and issuing) and materiel distribution of repair parts. As a result, commercial industry was able to significantly reduce inventory levels, to include repair parts, while reducing the order-ship-time for repair parts.[31] Through implementation of JIT and TAV initiatives commercial industry has seen a reduction in inventory costs up to twenty percent with an exponential increase in customer satisfaction all because repair parts were delivered sooner. In addition, commercial industry's ability to respond to emergency requests for repair parts has improved by fifty to seventy-five percent.[32] These initiatives have saved billions of dollars in cost avoidance and increased efficiencies in the following areas:

- Increase in on time deliveries.

- Decrease in transportation time and cost to deliver repair parts virtually worldwide.

- Inventory reductions and storage space reductions.

- Personnel reductions in inventory management (receipt, storage, and issue).

- Elimination of manual tracking of shipments.[33]

For the military, the key to success appears to be aligning U.S. Army standards with commercial standards. By leveraging off private industry's JIT and TAV business practices the U.S. Army can improve customer satisfaction, reduce inventory, provide asset visibility, decrease order-ship-time, and increase our distribution capability at the wholesale level. This will be discussed in detail after a review of the current prime vendor programs in place today.

SECTION III: CURRENT PRIME VENDOR PROGRAMS

Prime vendor is a DLA ongoing initiative that identifies a single commercial distributor as the major provider of a commodity to military activities and DLA supported federal customers within a specific geographic region. To the logistician, prime vendor is velocity management in action providing quality logistics support to soldiers as fast as any civilian industry delivers to their customers. Once again, velocity management is the U.S. Army program focusing on implementing and leveraging private industry business practices to improve customer satisfaction, reduce U.S. Army owned inventory, maximize transportation costs, and decrease pipeline costs. The four key benefits of the DLA Prime Vendor program are shown below:[34]

- Elimination of the layering of supplies at multiple echelons.

- Shifts inventory, inventory management, transportation, and personnel costs from the government to the contractor. DLA will now manage information, not physical inventory.

- Leverages the experience of private industry whose profit-based business practices require lean inventories and rapid response time.

- Allows the DoD to achieve significant annual savings and revolutionize logistics support at the wholesale level.

The prime vendor programs being implemented by DLA across all the services are quickly changing the business practices between the wholesale logistician, retail customer, and private industry. Under the DLA Prime Vendor program, the role of DoD depots and U.S. Army warehouses involved in supply distribution shifts to the prime vendor contractor. Additionally, the inventory, inventory management, storage, transportation, and personnel costs shift from the DoD to the prime vendor contractor. To meet the U.S. Army's power projection and rapid force projection needs, logistics systems must become much leaner, more flexible, and more responsive to customer needs. In the following paragraphs we will examine how several prime vender programs are being implemented and identify potential applications to the class IX repair parts program.[35]

Medical Prime Vendor

The Medical Prime Vendor Program is revolutionizing medical support throughout DoD. Under the direction of a task force established in March 1992 by the Director of Medical Materiel at the Defense Supply Center Philadelphia (DSCP) [known then as the

Defense Personnel Support Center] medical prime vendor is paving the way for future logistical support concepts.[36] By teaming with medical suppliers DSCP has implemented commercial inventory management and materiel distribution business practices that are providing the following benefits:

- Increased customer satisfaction by reducing delivery time down to 24 hours or less for 95% of items requested (savings valued at $173 million dollars).

- Increased customer satisfaction by broadening customer choices of pharmaceuticals by 270%.

- Increased customer satisfaction as shown by an 80% reduction in the number of product discrepancy reports submitted by customers.

- Prime vendor prices for 65% of all pharmaceuticals are below the average wholesale price.

- Backorders have decreased by 32% (savings valued at $98.6 million dollars).

- A 79% reduction in administrative lead-time (savings valued at $81.4 million dollars).

- Inventory reductions of $382 million dollars at wholesale level and $71 million dollars at retail level.

- A 62% reduction in depot storage space and depot storage costs (savings valued at $24.7 million dollars annually).

- A 24% savings in wholesale personnel (savings valued at $6.3 million dollars annually).[37]

The Medical Prime Vendor Program encompasses over 73% of DSCP medical business. Of the $1,053 million dollars in annual medical sales, $917 million dollars are used to purchase pharmaceuticals ($775 million dollars) and medical/surgical supplies ($142 million dollars).[38]

The Medical Prime Vendor Program is built around specific geographical regions. Each geographical region has a medical prime vendor as their single distributor for pharmaceuticals, medical and surgical supplies, and medical equipment. The medical prime vendor is linked into the Medical Prime Vendor Program through a universal data repository that contains information on all the medical items used under the Medical Prime Vendor Program. The universal data repository allows every medical treatment facility to compare prices, usage data, product information, and finally to order the product they decide best suits their needs.[39] Top quality products, dependable service, delivery in 24 hours or less, and choice of a broad range of commercial items have increased customer satisfaction and confidence in the Medical Prime Vendor System. As a result, inventory reductions have occurred at retail medical facilities and wholesale depots.[40]

The Medical Prime Vendor Program has four types of inventory it manages. The first type of inventory is routine stocks that do not expire. This inventory is contractor owned until a request is placed by a customer. Stockage quantities are based on historical usage data. The second type of inventory is routine stocks that have a shelf life. The contractor owns the inventory and rotates it using commercial business practices to minimize disposal and replacement costs due to expiration. The government pays the contractor a management fee to guarantee inventory rotation of these stocks. The third

type of inventory is known as the stock rotation program. The stock rotation program is designed to close the gap between the depletion of surge stocks and ramp-up of the industrial base. Under this program the government purchases critical shelf-life items which the contractor stores and rotates at the location of the source materiel. The government can use these items on demand but they are intended for use during contingency operations. Currently there are twenty-three items in the stock rotation program representing an investment of $19.6 million dollars. The annual cost for the contractor to store, manage and rotate these stocks is $111,000. The final type of inventory is surge stocks. Surge stocks are contractor owned inventory above and beyond projected usage data. These are government mandated quantities stored for contingency operations. The contractor is paid an annual holding fee plus a management fee to store, maintain, and rotate these stocks in accordance with commercial business practices. The contractor must provide these stocks to the government on demand. Using these inventory management techniques the Medical Prime Vendor Program has saved 60% of its maintenance costs associated with rotation and disposal of medical supplies with a shelf life.[41]

Another major benefit of the Medical Prime Vendor Program is the distribution and pricing agreements (DAPAs) DSCP has negotiated with product suppliers. A DAPA is a paperless agreement that establishes pricing information for medical prime vendor items. Commercial suppliers submit price and product information about their product electronically using the DAPA Management System. Their submission can be reviewed and approval agreements, DAPAs, completed in as little as seven days. Prior to the

DAPA Management System this process averaged five to six months. DAPAs are posted in the universal data repository and available on demand for review.[42]

With the increase in DAPAs the Medical Prime Vendor Program has expanded its product selection from 3,000 items under the old depot-stocked system to over 27,000 pharmaceutical items and over 197,500 medical and surgical items. Finally, the Medical Prime Vendor Program continues to support small businesses. By linking into a geographic medical prime vendor, over 40% of the DAPAs for medical and surgical equipment are with small businesses and over 22% of the DAPAs for pharmaceuticals and medical supplies are with small businesses.[43]

After almost seven years the Medical Prime Vendor Program is still growing. As they continue to explore new possibilities and integrate new commercial business practices into their inventory management and materiel distribution programs the one thing that remains constant is improving customer satisfaction.

Subsistence Prime Vendor

On Wednesday morning the dining facility manager is conducting a routine review of the inventory for the weekend meals. Upon realizing that he does not have enough steak to support the projected headcount he begins to look for alternative solutions. His shift leader assures him they have nothing to worry about. The shift leader sits down in front of his computer, pulls up the steak on the Army Food Management Information System (AFMIS) shopping list and submits an electronic order through the Subsistence Total Order and Receipt System (STORES) to his subsistence prime vendor. As he gets up

from his computer terminal and leaves the office he assures his dining facility manager the order will be delivered within 48 hours.[44]

This is an example of the confidence, flexibility, reliability, and teamwork dining facilities are experiencing as they partner with their subsistence prime vendor to improve the quality of food being served in dining facilities throughout the world. The Subsistence Prime Vendor Program came into existence as part of a 1995 DoD Food Inventory Demonstration Project. The ultimate objective of DLA and the Army Center of Excellence Subsistence (ACES) is to improve the quality of food being served in installation dining facilities.[45] Any other benefits realized have been the result of implementing commercial business practices and the teaming of government and commercial industry to meet the needs of the soldier.[46]

The key benefits the Subsistence Prime Vendor Program is providing the soldier are listed below:

- Customer satisfaction. The quality and variety of food served in dining facilities today is limitless. A soldier can drop a request for a specific item in the dining facility suggestion box and truly believe the subsistence prime vendor can provide it.

- Customer satisfaction. Soldiers are active participants in designing what they eat. Today's suggestion can be a reality in 24 to 48 hours.

- Better product selection. Soldiers are seeing and using brand name products every day. Products like Wishbone and Kraft salad dressing, Lipton soups and teas, Hellman's mayonnaise, Hunts ketchup, French's mustard, Thomas english muffins, Dole and Del Monte products, brand name yogurts, Libby's vegetables, and Pepperidge

Farms croutons are on the serving line. Additionally, the meats, vegetables, and salad products food service personnel are using are brand name products that are being ordered and delivered 24 to 48 hours prior to preparation.

- Just-in-Time delivery methods by subsistence prime vendors are providing quality products to dining facilities and reducing inventory in dining facility coolers. Additionally, if the dining facility orders a product that the subsistence prime vendor cannot provide, a brand name substitute can be offered and provided within the original time widow.

- Subsistence prime vendors are providing and maintaining vendor owned equipment to dining facilities. Equipment being provided to dining facilities include coffee and hot chocolate machines that dispense individual cups of "hot" coffee and hot chocolate, soft ice cream machines, soft yogurt machines, fruit juice machines, ice machines, and a broader selection of soft drinks.

- Subsistence prime vendors are training food service personnel on state of the art food preparation techniques being used by chefs in commercial restaurants today. These preparation techniques are improving the quality of food being prepared which has a direct correlation to customer satisfaction.

- U.S. Army operated garrison food distribution has ceased. Currently, this applies only to CONUS installations. As subsistence prime vendor matures overseas and the teaming between dining facilities and their subsistence prime vendor grows it is projected that garrison food distribution will discontinue overseas.

- Warehouse costs for subsistence storage space has been reduced from $17.5 million dollars down to $9.0 million dollars and has saved 260,000 square feet of storage space. The inventory reductions associated with a savings of 260,000 square feet of storage space have been estimated at $65.0 million dollars.

- A savings of 172 man-years operating CONUS Troop Issue Subsistence Activities (TISAs) has been realized. These man-years are being used to provide other subsistence services, therefore no actual dollar savings due to personnel reductions are being associated with the Subsistence Prime Vendor Program.[47]

The Subsistence Prime Vendor Program, much like the Medical Prime Vendor Program, is built around geographic regions. The subsistence prime vendor for each geographic region negotiates sub-contracts with major commercial businesses. The subsistence prime vendor is responsible for contract management, inventory management, contractor owned dining facility equipment, contractor training being provided dining facility personnel, and distribution of subsistence products to each dining facility. Products are offered to dining facilities through the Army Food Management Information System (AFMIS) shopping list and orders are electronically submitted to the subsistence prime vendor using the Subsistence Total Order and Receipt System (STORES). A paperless system that works.[48]

The Subsistence Prime Vendor Program is only one prong of a two prong program. While the Subsistence Prime Vendor Program is focusing on improving garrison dining facility operations the DoD Combat Feeding Program is focusing on providing highly trained personnel, equipment, and subsistence products to the combat soldier. Leveraging

off the subsistence prime vendor partnerships with commercial industry and academia new solutions and quality products are being integrated into the DoD Combat Feeding Program.

In just four years the Subsistence Prime Vendor Program is bringing soldiers into dining facilities over commercial restaurants. Just because your dining facility is the cheapest place to eat on post no longer means it has the poorest quality food being served. By implementing initiatives like a la carte dining facilities, dietary dining facilities, brand name salad bars, all you can eat days, and ethnic meal days your dining facility, partnered with their subsistence prime vendor, has put the quality back into installation dining facilities and brought customer satisfaction back to the forefront of subsistence.

Apache Helicopter Prime Vendor Support (PVS) Program

The Apache Prime Vendor Support (PVS) program is being developed by the Apache helicopter Project Manager's Office. In April 1997 Boeing-Lockheed Martin submitted a joint proposal to implement a PVS program for Apache helicopter unique repair parts.[49]

The Boeing-Lockheed Martin proposal would transfer wholesale support requirements for Apache unique repair parts to a single limited liability company known as Team Apache System (TAS). The TAS concept would eliminate the need for DLA personnel to buy, store, or distribute repair parts unique to the Apache helicopter. The TAS office would be directly linked to the retail level supply managers and would provide them with all required Apache unique repair parts.[50]

All Apache unique repair parts will be contractor owned until delivery is made to the retail supply support activity. The TAS will conduct all inventory management and materiel distribution functions associated with Apache unique repair parts. Inventory managers at TAS will provide interactive supply status and movement tracking information to DLA which will in turn update the Defense Automatic Addressing System (DAAS) gateway and provide status to the customer.[51]

The projected major advantages to the Apache Prime Vendor Support program are listed below:

- Improved system readiness based on increased availability of Apache unique repair parts from TAS.

- Wholesale level inventory at DLA will be eliminated.

- Decreased class IX pipeline costs because Apache unique repair parts distribution will be part of TAS.

- Elimination of redundant supply functions at wholesale level.

- Reduction in the size of the logistics footprint on the battlefield.

- The leveraging of commercial just-in-time distribution techniques by TAS will also streamline delivery of Apache unique repair parts to retail locations.[52]

The Apache PVS proposal also contains significant performance guarantees estimated to reduce flying-hour costs by 20% and improve current requisition fill rates. In effect, the contractor will be encouraged and rewarded through incentive programs to design spare parts that last longer. Finally, the Apache PVS program will result in the

U.S. Army benefiting from modernization and upgrades to Apache components as the contractor strives to provide the best product at the lowest cost.[53]

Paladin Fleet Management Pilot Program

Life cycle sustainment for the M109 Family of Vehicles (FOV) is currently provided by multiple government agencies and commercial businesses using multiple processes to deliver their services and materiels. Duplicative infrastructure, inventories, inventory management and materiel distribution techniques are common across DoD as each of these agencies manage their piece of the pie. The U.S. Army Tank and Automotive Command (TACOM) in concert with PM Paladin/FAASV (Field Artillery Ammunition Support Vehicle) is developing the M109 Fleet Management Pilot Program. This program is being developed in response to the 1995 Defense Science Board recommendation to privatize duplicative functions being performed by government agencies. In a 26 February 1996 memorandum the Deputy Secretary of Defense provided general guidance to maximize the use of contractor provided, long term, total life cycle logistics support that combines depot level maintenance with wholesale and selected retail materiel management functions.[54]

On 7 May 1996 the Deputy Assistant Secretary of the Army approved the M109 Fleet Management Pilot Program. According to the concept, the M109 Fleet Management Pilot Program will streamline, reengineer, and consolidate the M109 Family of Vehicles (FOV) logistics, technical and engineering support by providing a single contractor for total life cycle logistics support. It is estimated that this approach can

provide a 20-30% savings in sustainment costs alone based solely on the use of commercial business inventory management and materiel distribution techniques.[55]

The major objectives of the M109 Fleet Management Pilot Program are listed below:

- Establish a pilot program to evaluate the consequences of reengineering the sustainment process, implementing innovative commercial business practices, and outsourcing life cycle sustainment support functions.

- Establish a Fleet Manager as a single point of contact for life cycle sustainment support.

- Validate the potential for saving 20-30% in life cycle sustainment support costs.

- Improve customer satisfaction by modernizing the M109 FOV fleet via continuously upgrading repair parts and components, delivering repair parts in a timely manner, and establishing a logistics support process that is seamless to the customer.[56]

The Fleet Manager, another name for prime vendor, will be the sole source of supply for all M109 FOV unique repair parts. There are currently 510 U.S. Army managed and 2,018 DLA managed unique repair parts for the M109 FOV. The Fleet Manager will be responsible for all inventory management and materiel distribution functions associated with the M109 FOV unique repair parts. All M109 FOV unique repair parts will be contractor owned until delivered to the Army. It should be noted that the Fleet Manager is not responsible for secondary items added to the system such as SINCGARS and the machine gun.[57]

In addition to specific requirements defined in the draft Request for Proposal (RFP) the necessity for teaming between TACOM, PM Paladin/FAASV, DLA, and the Fleet Manager is well defined. It says,

> The contractor shall conduct program management to include planning, directing, controlling, reporting, reviewing, and evaluating activities to execute M109 FOV Fleet Management. Perform general management to provide technical guidance to government customers and establish and integrate configuration, logistics, and maintenance management systems to support the M109 FOV. Perform system analysis to recommend requirements determination, with supporting rationale, current and future system performance enhancements and sustainment needs of the M109 FOV. Perform long term planning to develop strategies to enhance system performance and lower life cycle costs for periods beyond one year. Support government industrial readiness analysis, problem identification, solution generation, resource allocation, and success measurement.[58]

This clearly lays out the intent for TACOM, PM Paladin/FAASV, DLA, and the Fleet Manager to build a partnership aimed at increasing customer satisfaction by building a M109 FOV that is reliable, less costly to maintain, and faster to obtain the repair parts when a breakdown does occur.

Under the M109 Fleet Management Pilot Program the Fleet Manager will be the single point of contact for M109 FOV life cycle support. The Fleet Manager will provide sustainment support to all M109 FOV customers during peace, military operations other that war (MOOTW), and war. The Fleet Manager will maintain a management information system that is compliant with U.S. Army legacy systems and updated as change packages and new releases are fielded. The Fleet Manager will provide the government access to their database and will assist the government in preparing data and conducting analysis to support U.S. Army budget formulation. The Fleet Manager will

receive requisitions for M109 FOV unique repair parts from DAAS. Supply status and movement tracking data will be provided by the Fleet Manager via DAAS to the customer. Finally, the Fleet Manager will track and report performance data against the strategic metrics of Order Ship Time (OST) back orders/inventory effectiveness, customer satisfaction, cost performance, and customer return rates. Using these five metrics the Fleet Manager will design the M109 Fleet Management Pilot Program to accomplish the following customer satisfaction goals:

- Reduce life cycle sustainment support costs.

- Improve response time for M109 FOV unique repair parts by achieving 24 hour response time for not mission capable supply (NMCS) requisitions and 2-5 day response time for all other requisitions.

- Perform system analysis and recommend continuous long-term system performance enhancements to the M109 FOV.

- Improve the reliability of the M109 FOV by supplying improved repair parts through the U.S. Army Materiel Command, "Army Strategy for Modernization Through Spares" program. This program is designed to reduce system Operational & Support (O&S) cost while extending the useful life of a system.

- Centralize system technical support to a single point of contact, the Fleet Manager.

- Implement initiatives to augment organic maintenance and repair activities. The faster a reparable can be repaired and returned to stock the less inventory the Fleet Manager must maintain.

- Incorporate innovative commercial business practices and new technology to enhance communications with customers, inventory management, materiel distribution, commercial banking processes and reporting procedures.[59]

The major benefits believed to come from implementation of the M109 Fleet Management Pilot Program are listed below:

- Improved system readiness based on increased availability of M109 FOV unique repair parts.

- All M109 FOV wholesale level inventory will be eliminated.

- Decreased class IX pipeline costs because M109 FOV unique repair parts distribution will be the responsibility of the M109 Fleet Manager.

- Elimination of redundant supply functions at wholesale level.

- Reduction in the size of the logistics footprint on the battlefield.

- The leveraging of commercial just-in-time and velocity management distribution techniques by the M109 Fleet Manager will streamline delivery of M109 FOV unique repair parts to retail locations.[60]

The partnership built between the Fleet Manager, PM Paladin/FAASV, TACOM and DLA will be the key to the success of the M109 Fleet Management Pilot Program. The true measure of effectiveness, customer satisfaction, will determine if prime vendor for class IX repair parts is a viable option. A relationship between the government and commercial industry that is 10% hierarchical and 90% horizontal will build the team that can optimize commercial business practices and provide the best possible product to the customer in the field.

SECTION IV. COMMERCIAL INDUSTRY INVENTORY MANAGEMENT AND MATERIEL DISTRIBUTION BUSINESS PRACTICES

Commercial businesses have been implementing Just-In-Time (JIT) and Velocity Management business practices since the mid-1980s. Both commercial business and the U.S. Army use four critical management areas for repair parts management: receipt, storage, issue, and transportation. The U.S. Army standards for these four areas are defined in Army Regulation 710-2 (AR 710-2).[61] Commercial industry performance standards for inventory management and materiel distribution are not public information. Most commercial businesses consider this information proprietary. Table 7 is a comparative analysis of U.S. Army standards against commercial business standards. The results of this comparative analysis formulate the foundation for the remaining discussion in this section.

Receipt is the first area of focus. There are three management standards that fall under the receipt management area.

The first management standard is U.S. Army request processing time and commercial business order processing time. Both standards measure the time from receipt of the order at the U.S. Army Supply Support Activity (SSA) or the commercial businesses distribution center to the time the order was processed for shipment or passed to the next higher source of supply. The U.S. Army standard is two days for request processing time.[62] The commercial business standard for order processing time is one day or less.[63] This immediate difference in request versus order processing time allows commercial business to obtain visibility of the requirement sooner, process the request for

issue, or provide immediate status back to the requester. Additionally, commercial business JIT repair parts supply and distribution operations run a seven day week, twenty-four hours a day operations.[64] When compared to U.S. Army operations which normally run five days a week the time advantage of a commercial business becomes very obvious.

Comparison of Army to Commercial Business Practices

Area	Army Measure of Effectiveness	Standard	Commercial Measure of Effectiveness	Standard
RECEIPT	Request Processing Time	2 Days	Order Processing Time	1 Day
	Receipt Processing Time	3 Days	Supply Processing Time	4 Hours
			Order Cycle Time	Priority 1 2 3 & 4
	OST CONUS OST OCONUS	7-11 Days 13-20 Days	CONUS OCONUS	24hrs 2 Days 3 Days 2 Days 6 Days 10 Days
STORAGE	Inventory Accuracy	95%	Inventory Control Accuracy	100%
	Demand Satisfaction	75%	First Pass-Fill Rate	95%
	Stockage Level (DS) Stockage Level (GS)	10 DOS 30 DOS	DOS Inventory	1 DOS
ISSUE	Local Cdr Policy	1-3 Days	Issue Standard	1 Day
TRANS	None	No DA Standard	Transport Time	Priority 1 2 3 & 4 24hrs 2 Days 3 Days 2 Days 6 Days 10 Days

Table 7

The second management standard under the receipt management area is receipt processing time for the U.S. Army and supply processing time for commercial business. Receipt/supply processing time represents the time, expressed in hours or days, it takes from arrival of a repair part at the SSA, store, or factory until the receipt is posted to the accountable record. The U.S. Army standard is three days for receipt processing time.[65]

Commercial businesses standard for supply processing time is four hours.[66] As with request/order processing time, four hour supply processing time provides commercial businesses almost immediate visibility and use of repair parts upon arrival. U.S. Army units must wait unnecessarily when the repair part is sitting in the warehouse receiving section awaiting processing.

Order-ship-time (OST) is the third management standard used by the U.S. Army in the receipt management area. Commercial business calls it order cycle time. OST and order cycle time represent the actual number of days that elapse between the document date of a non-backordered request and the date the receipt is posted to the accountable record. U.S. Army CONUS OST runs between seven and ten days and OCONUS OST runs between thirteen and twenty days.[67] Commercial industry operates off a priority system that governs order cycle time. Here is a leading wholesale manufacturers JIT standards for order cycle time.

Priority One -- Emergency order usually indicating equipment is inoperable. This order takes priority over all other orders. The target ship time is 24 hours or less CONUS and two days or less OCONUS.

Priority Two -- Non-emergency direct order from a customer. . The target ship time is two days or less CONUS and six days or less OCONUS.

Priority Three -- Inter-company order to replenish stocks not needed to fill immediate customer needs. The target ship time is three days or less CONUS and ten days or less OCONUS.

Priority Four -- Parts needed for retrofits or spare parts orders to accompany new equipment. The target ship time is three days or less CONUS and ten days or less OCONUS.[68] A comparison of U.S. Army OST and commercial business order cycle time indicates major savings in inventory and pipeline costs may be realized if commercial standards were adopted by the U.S. Army or integrated into a U.S. Army class IX prime vendor program.

Commercial businesses ability to perform its receipt management functions faster that the U.S. Army allows them to save money on inventory costs because they can maintain smaller inventories and still meet customer demands. Second, commercial industry can complete repairs faster without losing income while waiting on delivery of repair parts. Finally, higher standards by commercial business equals improved customer satisfaction and greater confidence in the ability of the repair parts system to deliver on time.

Storage is the next area of focus. Three management standards exist in the U.S. Army and commercial industry. The first comparison is between the U.S. Army inventory accuracy standard of 95%[69] and commercial businesses inventory control accuracy standard of 100%.[70] Inventory accuracy represents the number of repair parts on the accountable record as compared to the actual number of repair parts physically in the storage location(s). The discrepancy, shortage or overage, is captured in dollar value of the shortage or excess. Depending on the cost of the repair parts a five percent loss or gain may represent millions of dollars of repair parts that were reordered due to an acceptable loss of accountability.

Demand satisfaction versus commercial businesses first-pass fill rate is the second management standard under storage. Both standards measure the number of orders filled completely as compared to the total number of orders received. The U.S. Army standard is 75%.[71] Commercial businesses standard is 95%.[72] The twenty percent difference between U.S. Army and commercial business standards demonstrates a higher commitment and ability by commercial business to meet customer requirements. This higher standard is indicative of a flexible and responsive repair parts system capable of meeting the customers repair parts needs.

Days of supply (DOS) inventory is the final storage management standard. DOS equates to the stockage level maintained in a warehouse to meet customer demands. Commercial business maintains one DOS of inventory.[73] This when compared to a divisional SSA which maintains ten DOS and a corps SSA which maintains thirty DOS[74] reinforces the points made in section II with regard to the layering of inventories to compensate for an inefficient supply system full of inventory management and materiel distribution problems.

The commercial businesses higher standards in inventory accuracy, demand satisfaction, and inventory levels (DOS) provides numerous advantages over the U.S. Army repair parts system. These include inventory reductions worth millions of dollars, maximizing use of available inventory due to higher inventory accuracy rates and higher customer satisfaction rates and increased confidence in the repair parts system attributed to increased repair parts availability.[75]

Issue is the third area of emphasis under repair parts management. There is no U.S. Army standard for issuing repair parts once the release order has been cut. Some local commanders have established policies in their internal SOPs that require repair parts to be pulled and placed in the customer bins based on the priority of the original requisition.[76] Commercial businesses policy for issue of repair parts is one day or less.[77] Commercial businesses ability to issue repair parts in one day or less has three distinct advantages. First, industry saves money in inventory costs because they can maintain smaller inventories and still meet customer demands. Second, commercial businesses customers get their repair parts faster, repair their equipment sooner, and decrease their loss of income from their inability to use their equipment. Third, faster issues equals higher customer satisfaction and greater confidence in the commercial repair parts system.

Transportation is the last area of focus. The goal of the U.S. Army supply system is to transport repair parts to the requesting units SSA as quickly as possible. No explicit standard exists for completion of the transportation process. The transportation system is designed to "fill up" the truck prior to departure from a depot enroute to an installation. Shipments headed OCONUS are packed at the Consolidation Containerization Point (CCP) in either milvan containers or 463L pallets. The objective is to fill the milvan or 463L pallet before shipping overseas. A tremendous transportation burden has been taken off the division now that repair parts are being packaged and delivered directly to the Forward Support Battalion SSA without going through the Main Support Battalion SSA.

However, unlike the U.S. Army system, commercial business uses smaller, more frequent shipments to deliver repair parts. Industry delivery standards and mode of

shipment, air or truck, are determined by the priority of the order as shown in Table 7 and as previously discussed in the receipt management section.[78]

There are four advantages to using more frequent shipments. First, more frequent shipments save money on inventory costs because commercial businesses can maintain smaller inventories and still meet customer demands. Second, more frequent shipments provide repair parts to commercial businesses customers faster. Likewise, replenishment orders placed by commercial distribution centers can be filled faster as a result of more frequent shipments. Third, more frequent shipments provide flexibility by allowing commercial businesses to meet their customers changing demands. Fourth, more frequent shipments mean higher customer satisfaction and increased confidence in the repair parts system to deliver required repair parts.

In conclusion, the savings commercial industry is realizing in inventory reductions, customer satisfaction and confidence in the repair parts system, and time and accuracy standards warrant pursuit of a prime vendor for class IX repair parts. By leveraging commercial JIT and Velocity Management business practices the U.S. Army can reduce inventory levels, decrease pipeline costs, eliminate redundancies, streamline deliveries, improve customer satisfaction and confidence in the repair parts system, and lower life cycle sustainment costs while building a class IX repair parts system focusing on using prime vendors to create a virtual warehouse at the wholesale level. The following section will discuss the prime vendor framework under which class IX repair parts should be pursued in order to provide maximum customer satisfaction, cost savings, and inventory reductions with minimum risk.

SECTION V. CLASS IX REPAIR PARTS PRIME VENDOR FRAMEWORK

While the first phase of the Revolution in Military Logistics (RML) is focusing on leveraging technology and adapting commercial business practices to military applications the U.S. Army must broaden its applications of RML during this phase when it comes to wholesale level class IX repair parts. The prime vendor concept can revolutionize wholesale class IX repair parts management not only for unique repair parts but also for common repair parts. The implementation of any class IX repair parts prime vendor program must be integrated into the RML program to ensure DLA, the Program Manager's office for any system being considered for a class IX repair parts prime vendor program, and commercial industry are synchronized with other initiatives that monitor supply consumption, anticipate losses, and automatically generate replenishments to a predetermined level based on operating tempo and battle rhythm. Real-time situational awareness and end-to-end connectivity are the backbone of this new environment. This will increase customer satisfaction and build confidence in the class IX repair parts system eliminating the need to maintain iterative, redundant inventories because of poorly linked systems built around poor inventory management and materiel distribution business rules.

The framework shown in Table 8 lays out the basic concepts for managing class IX repair parts, unique and common, under a prime vendor concept. A prime vendor contract for unique class IX repair parts would be negotiated between DLA, the Program Manager, and the contractor that builds the system. The contracting office at DLA would be the lead agency for negotiating all class IX unique repair parts prime vendor contracts.

The prime vendor would be responsible for world-wide requirements for all unique repair parts supporting that particular system.

System Unique CL IX Repair Parts to include Reparables/Excess CL IX	CL IX Common Repair Parts to include Reparables/Excess CL IX
DLA/Program Manager contract with Prime Vendor	DLA contract with Prime Vendor
Contract for CL IX linked to prime contractor that builds the system	Regionally focused
Single POC for DLA, Program Manager, and customer	Single POC for DLA and customer
Requisitions flow through existing Cl IX automated systems. DAAS routes requirement to the Prime Vendor and provides an information copy to the DLA item manager	Requisitions flow through existing Cl IX automated systems. DAAS routes requirement to the Prime Vendor and provides an information copy to the DLA item manager
Stock Rotation Program	Stock Rotation Program based on 12 months of performance data
Surge Stocks included in contract	Surge Stocks included in contract
Leverages commercial inventory management & JIT distribution business practices	Leverages commercial inventory management & JIT distribution business practices
Automation systems linked to DLA and Program Manager	Automation systems linked to DLA
Metrics analysis using Velocity Management metrics	Metrics analysis using Velocity Management metrics
	Supports Small Businesses through Prime Vendor Sub-Contracts and Distribution and Pricing Agreements (DAPAs) with product suppliers
	Networked Data Base that contains a universal data repository on all common user CL IX repair parts

Table 8

A prime vendor contract for class IX common repair parts would be negotiated between DLA and the prime vendor. Contracts for class IX common repair parts would be regionally focused using the same concepts as the Medical Prime Vendor Program and

the Subsistence Prime Vendor Program. This would allow small businesses to compete for contracts with the prime vendor in each geographical region. Additionally, through the universal data repository, small businesses can submit competitive distribution and pricing agreements (DAPAs). This will allow small businesses to maintain an acceptable market share.

Section IV outlines the benefits from leveraging commercial industry inventory management and materiel distribution business practices. The benefits and the potential cost savings from each of the four areas discussed cannot be overlooked. Smart but aggressive use of the class IX repair parts prime vendor framework will allow the wholesale class IX repair parts system to be linked with the retail class IX repair parts system creating a virtual warehouse. Only then will the U.S. Army have a system capable of monitoring consumption, anticipating losses, and automatically generating class IX replenishments from the appropriate wholesale or retail location to meet the combat commander's need.

Under the class IX repair parts prime vendor program surge stocks would be contractor owned inventory above the projected usage requirements. Surge stock requirements would be defined in the prime vendor contract and updated annually based on usage data and changes in usage requirements. The prime vendor is paid an annual holding fee plus a management fee to store and maintain surge stocks in accordance with commercial business practices. Surge stocks would be provided to the U.S. Army by the prime vendor immediately upon request by DLA.

The DLA manager for each class IX repair parts prime vendor contract will decide if the contract requires a stock rotation program. The stock rotation program is designed to fill the gap between use of surge stocks and ramp-up of the industrial base. Any class IX repair parts maintained as part of the stock rotation program will be government owned. The prime vendor will store these stocks and be paid an annual management fee for maintaining these stocks. Finally, under the class IX prime vendor program for unique and common repair parts the overarching objective of establishing a single point of contact to facilitate maximum throughput and follow-on sustainment becomes a reality.

In summary, the framework for a class IX repair parts prime vendor program layed out in this paper will provide the following key benefits to the U.S. Army repair parts system:

- Increase customer satisfaction by reducing order-ship-time for class IX repair parts.

- Increase customer confidence in the class IX repair parts system.

- Increase customer satisfaction by providing a single point of contact for support.

- Shift inventory, inventory management, and distribution costs to the class IX repair parts prime vendor.

- Leverage the experience of commercial industry business practices for inventory management and materiel distribution.

- Eliminates the layering of inventory throughout DoD.

- Reduce the size of inventories, wholesale and retail, based on improved order-ship-time.

- Reduce or eliminate depot storage requirements for class IX repair parts managed by a prime vendor.

- Improve readiness rates based on increased availability of repair parts.

- Decrease class IX pipeline costs because prime vendor class IX repair parts will be contractor owned until delivery to a supply support activity.

- Elimination of redundant supply functions at the wholesale level.

- Improved order-ship-time will decrease stockage levels and reduce the logistics footprint on the battlefield.

- Reduce system life cycle sustainment support costs.

- Improve the reliability of systems by providing improved repair parts through the modernization through spares program.

- Leverages the prime contract for system analysis and recommendations on long-term system performance enhancements.

While the benefits of a class IX repair parts prime vendor program seem overwhelming there are risks to be considered. There are four primary risks that have been identified with the prime vendor support programs for class IX repair parts and system maintenance.[79] The author believes all of these risks can be mitigated even if it means changing the law.

The first risk is contractors on the battlefield. With the downsizing of the U.S. Army and the civilian and soldier reductions outlined in the Quadrennial Defense Review

(QDR) the need for contractors on the battlefield is increasing.[80] However, the recent publication of Department of the Army Pamphlet 715-16, Contractor Deployment Guide, in concert with ongoing initiatives to publish doctrine on contractors on the battlefield by the Assistant Secretary of the Army for Research, Development, and Acquisition should provide definitive guidance on this issue in the near future.[81]

The second issue revolves around the argument that the U.S. Government is prohibited from contracting out a function which, under the totality of circumstances involved, is related so intimately to the public interest that performance by U.S. Government employees is mandated.[82] Each class IX repair parts prime vendor contract will have to be evaluated individually by the legal system to determine if the inherently governmental function clause is being violated.

The third risk deals with determining the effects of the loss of organic capability by the armed forces. Once again, the civilian and soldier reductions in the QDR may be driving the U.S. Army to using contracts as the only means to retain the capability.[83]

The final risk involves two legal issues that may require changing the law. Before converting an activity to or from in-house performance Office of Management and Budget Circular A-76, U.S. Code Title 10, and the annual appropriations act require the preparation of cost comparison studies. While this provision does not require a change in the law it does require time and can delay the award of a contract. Additionally, U.S. Code Title 10 states that there is a fifty percent cap on using funds allotted for depot-level maintenance and repair to contract non-federal government personnel to perform that service.[84] Although depot-level maintenance and repair may have to be excluded from

initial class IX repair parts prime vendor contracts the other major benefits outlined in this monograph warrant pursuing the initiation of a class IX repair parts prime vendor program.

SECTION VI. CONCLUSION

Initiation of a class IX repair parts prime vendor program for unique and common repair parts is feasible. This monograph has shown the benefits and savings that can be realized from a class IX repair parts prime vendor program.

Integration of the class IX repair parts prime vendor program at the wholesale level supports the leveraging of technology and integration of commercial business practices as we shape the virtual battlefield described in Joint Vision 2010. The fusion of logistics information and transportation technologies between the wholesale repair parts system and the retail repair parts system can create a virtual warehouse capable of meeting the needs of an Army XXI force. The logistics community cannot obtain information superiority in the repair parts arena until we create a seamless repair parts system.

By designing a class IX repair parts prime vendor program for unique and common repair parts that capitalizes on the strengths of the Medical Prime Vendor Program, Subsistence Prime Vendor Program, Apache Prime Vendor Support Program, and the Paladin Fleet Management Pilot Program every benefit defined under the DLA Prime Vendor Program can be achieved. The layering of repair parts at multiple echelons will be eliminated. Inventory, inventory management, and transportation costs will shift from the government to the prime vendor. The experiences of private industry, whose profit based

business practices require lean inventories and rapid response time, will be leveraged. Finally, DoD will achieve significant annual savings and revolutionize logistics support at the wholesale level.

The class IX repair parts prime vendor program will allow DLA to: manage information and distribution instead of inventory; manage suppliers instead of supplies; buy response time instead of inventory; and manage the integration of logistics capability instead of owning logistics capability. The final result will be a class IX repair parts team between DLA and commercial business that is predictive, anticipatory, and responsive to customer needs.

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